

CLAIMS

What is claimed is:

1. A paste forming method for forming paste on a surface of an object comprising:
providing a stencil having a plurality of apertures formed therethrough from a top surface of said stencil to a bottom surface of said stencil, at least one aperture of said plurality of apertures including a first portion having a first cross-sectional area formed by a first wall portion having a first diameter and extending generally vertically from said top surface of said stencil, a second portion of said at least one aperture of said plurality of apertures adjacent said bottom surface of said stencil and having a second cross-sectional area formed by a second wall portion having a second diameter larger than said first diameter of said first wall portion and extending generally vertically from said bottom surface of said stencil, said stencil having a thickness in the range of from 0.1 to 10 times said first diameter of said first wall portion of said at least one aperture of said plurality of apertures, and at least one sloped annular shoulder having a shape located between said first wall portion and said second wall portion of said at least one aperture of said plurality of apertures;
applying said stencil to a surface of said object;
applying paste to said stencil;
wiping said paste across said top surface of said stencil to force said paste through said plurality of apertures;
preventing contact of said paste with a portion of said second wall portion of said at least one aperture of said plurality of apertures during said extruding of said paste by said second cross-sectional area of said second portion of said at least one aperture of said plurality of apertures being larger than said first cross-sectional area of said first portion of said at least one aperture of said plurality of apertures; and
removing said stencil and leaving portions of said paste in a substantially vertical column.

2. The method according to claim 1, wherein said extruding further comprises: applying said paste to said top surface.
3. The method according to claim 1, wherein said paste has a viscosity of approximately 70K centipoise.
4. The method according to claim 1, wherein said paste has a thixotropic index ranging between about 1.7 to 3.2.
5. The method according to claim 1, wherein said paste has a thixotropic index of approximately 2.5.
6. The method according to claim 1, wherein said stencil is made of stainless steel.
7. The method according to claim 1, wherein said stencil is made of plastic.
8. The method according to claim 1, wherein said at least one sloped annular shoulder slopes from said first portion of said at least one aperture of said plurality of apertures towards said second portion of said at least one aperture of said plurality of apertures.
9. The method according to claim 8, wherein said at least one sloped annular shoulder has an acute shape.
10. The method according to claim 8, wherein said at least one sloped annular shoulder has an obtuse shape.
11. The method according to claim 8, wherein said at least one sloped annular shoulder has an indented shape.